



CITY OF MUKILTEO

REQUEST FOR COMMENTS

DATE: June 6, 2016

X	Alderwood Water District – Dan Sheil /Lauren Balisky	X	Puget Sound Clean Air Agency (Beth Carper)
	Burlington Northern Santa Fe Railway (Richard Wagner)	X	Puget Sound Energy (Dom Amor)
	City of Edmonds (Rob Chave)		Puget Sound Regional Council
	City of Everett (Allan Giffen)		Seattle Dist. Corps of Engineers (Dept. Army-Reg. Branch)
	City of Everett (Dave Koenig)		Snohomish Co. Airport/Paine Field (A. Rardin/B. Dolan)
	City of Lynnwood (Paul Krauss)		Snohomish Co. Assessor's Office (<i>Ordinances Only</i>)
	City of Mill Creek (Tom Rogers)		Snohomish Co. Conservation District
X	City of Mukilteo (Building Official)		Snohomish Co. Environmental (Candace Soine)
X	City of Mukilteo (Fire Chief)		Snohomish Co. Fire District #1 (Ed Widdis)
X	City of Mukilteo (Fire Marshal)		Snohomish Co. Marine Res. Comm. (Kathleen Herrmann)
X	City of Mukilteo (Engineering "In-Box")		Snohomish Co. Planning & Dev. Svcs. (Darryl Easton)
X	City of Mukilteo (Com. Dev. Dir.)(<i>Postcard/Notice only</i>)		Snohomish Co. Public Works (Deb Werdal)
X	City of Mukilteo (Charles Macklin, Police Chief)	X	Snohomish Co. PUD: Dist. Eng. Services (Mary Wicklund)
X	Comcast of Washington (Casey Brown)	X	Snohomish Health District (Brent Raasina)
X	Community Transit (Kate Tourtellot)		Sound Transit Authority (Perry Weinberg)
	Dept. of Commerce (Growth Mgmt. Svcs Rev. Team)		Tulalip Tribes
	Dept. of Natural Resources (James Taylor)		Tulalip Tribes – (Richard Young)
	FAA/Air Traffic Division, ANM-0520 (Daniel Shoemaker)	X	United States Postal Service (Donald L. Hatch)
	FEMA (John Graves)	X	Verizon Company of the NW, Inc. (Nate Kimball.)
	Island County MRC (Rex Porter) (<i>Shoreline Only</i>)		Washington Dept. of Ecology (Peg Plummer)
	Master Builders King/Sno. Counties (Jennifer Anderson)		Washington Dept of Fish & Wildlife (Jamie Bails)
X	Mukilteo Beacon (Editor) (<i>Postcard/Notice only</i>)		WSDOT (Scott Rodman)
	Mukilteo School District (Cindy Steigerwald)		WSDOT (Ramin Pazooki)
	Mukilteo School District (Josette Baines)		WSDOT Ferries(Kojo Fordjour) (<i>Shoreline Only</i>)
X	Mukilteo Tribune (Editor) (<i>Postcard/Notice only</i>)		WRIA 7 Water Resources
	Mukilteo Water & Wastewater District (Jim Voetberg, Manager; Rick Matthews; Jodi Kerslake)	X	Planning Commission (<i>Postcard Only</i>)
	National Marine Fishery Service	X	Adjacent Property Owners
X	Office of Archaeology & Historic Pres. (Allyson Brooks)	X	Applicant/Contact Person (<i>Notice Only</i>)
	Ogden, Murphy, Wallace (Angela Belbeck) (<i>Ordinances Only</i>)	X	Parties of Interest
	Pilchuck Audubon Society (Karen Snyder)		Parties of Record
	Port of Everett (Graham Anderson)	X	Property Owners within 300' (<i>Postcard/Notice Only</i>)
			Other:

FILE NO.: PPR-2016-004

PROPONENT: David Fey

PROJECT NAME: Mukilteo Memory Care

PROJECT DESCRIPTION: Construction of a two-story wood framed structure approximately 44,000 square feet to be used as a 52-unit memory care facility on a 1.51 acre vacant lot in the PCB(S) zoning district with associated grading, drainage improvements, parking, landscaping, and street frontage improvements.

FILE NO: PPR-2016-004

PROPONENT: David Fey

PROJECT NAME: Mukilteo Memory Care

ATTACHED IS:

X	Notice of Application		Plat Map (Reduced)
	DNS	X	Site Plan (Reduced)
X	Environmental Checklist	X	Location Map
X	Application		Vicinity Map
	Narrative Statement(s)	X	Other: Geotechnical Report

NOTE: _____

Please review this project as it relates to your area of concern and return your comments with this cover sheet by, June 28, 2016 to Anita Marrero, Associate Planner, City of Mukilteo, 11930 Cyrus Way, Mukilteo, WA 98275.



Anita Marrero
Associate Planner

6/6/16
Date

RESPONSE SECTION:

____ Comments Attached

____ No Comments

COMMENTS: _____

Signature

Date

Company

DO YOU WANT A COPY OF OUR NOTICE OF DECISION

YES __ **NO** __



11930 Cyrus Way
Mukilteo, WA 98275
(425) 263-8000

Notice of Application for Mukilteo Memory Care at 4686 Pointes Drive by David Fey

David Fey of Jenson Fey Architecture on the behalf of **HSP Harbour Pointe, LLC** applied for a Land Use Development Permit with the City of Mukilteo on June 1, 2016. The application became complete on June 1, 2016. This application and all supporting documents are available at City Hall for public viewing. (File No. PPR-2016-004)

Description of Proposal: Construction of a two-story wood framed structure approximately 44,000 square feet to be used as a 52-unit memory care facility on a 1.51 acre vacant lot in the PCB(S) zoning district with associated grading, drainage improvements, parking, landscaping, and street frontage improvements.

Location of Proposal: PAR 1 CITY OF MUK BLA REC AFN 200203280007 & SURV REC AFN 200203285004; otherwise known as 4686 Pointes Drive, Mukilteo, Washington.

Environmental Documents Prepared for the Proposal:

- Environmental checklist prepared by David Fey dated June 1, 2016
- Geotechnical Report prepared by Associated Earth Sciences, Inc. dated May 20, 2016

List of Required Permits:

- Land Use Permit
- Engineering Permit
- Building Permit
- Any State and Federal Permits if applicable.

Applicable Policies and Requirements

The project will be reviewed for consistency with the following policies, standards and regulations:

- | | |
|--|--|
| <input type="checkbox"/> Possession Shores Master Plan | <input checked="" type="checkbox"/> Sector Plan & Amendments |
| <input checked="" type="checkbox"/> Comprehensive Plan, Shoreline Master Plan | <input checked="" type="checkbox"/> Mukilteo Municipal Code |
| <input checked="" type="checkbox"/> International Building Code (2012 Edition) | <input checked="" type="checkbox"/> City of Mukilteo Development Standards |
| <input checked="" type="checkbox"/> International Fire Code (2012 Edition) | |

SEPA Addendum Process to be Used:

The City of Mukilteo, as lead agency for this proposal expects to issue a SEPA Addendum for the proposal. This may be the only opportunity to comment on the environmental impacts of the proposal.

Comment Period

The application and supporting documents are available for review at the City of Mukilteo, 11930 Cyrus Way, Mukilteo, WA 98275. Contact: Anita Marrero, Associate Planner at (425) 263-8044. The public is invited to comment on the project by submitting written comments to the Planning Department at the above address by 4:30 p.m. on the date noted below.

Notice of Application Issued: Tuesday, June 14, 2016

End of Comment Period: Tuesday, June 28, 2016

The City will not act on this application until the end of the 14-day public comment period. Upon completion of project review the proposed application will be administratively approved, approved with conditions, or denied. You may request a copy of the final decision on the project by making a written request to the City contact person named below.

Public Hearing

There will not be a public hearing conducted on this project.

Appeals

The final decision on this project is administratively appealable. An appeal must be filed within 14 days after the final decision on the project is issued. Only persons who file written comments on the project in response to the Notice of Application are considered parties of record who may appeal the decision. If you do not file written comments within the comment period, you may not appeal the final decision.

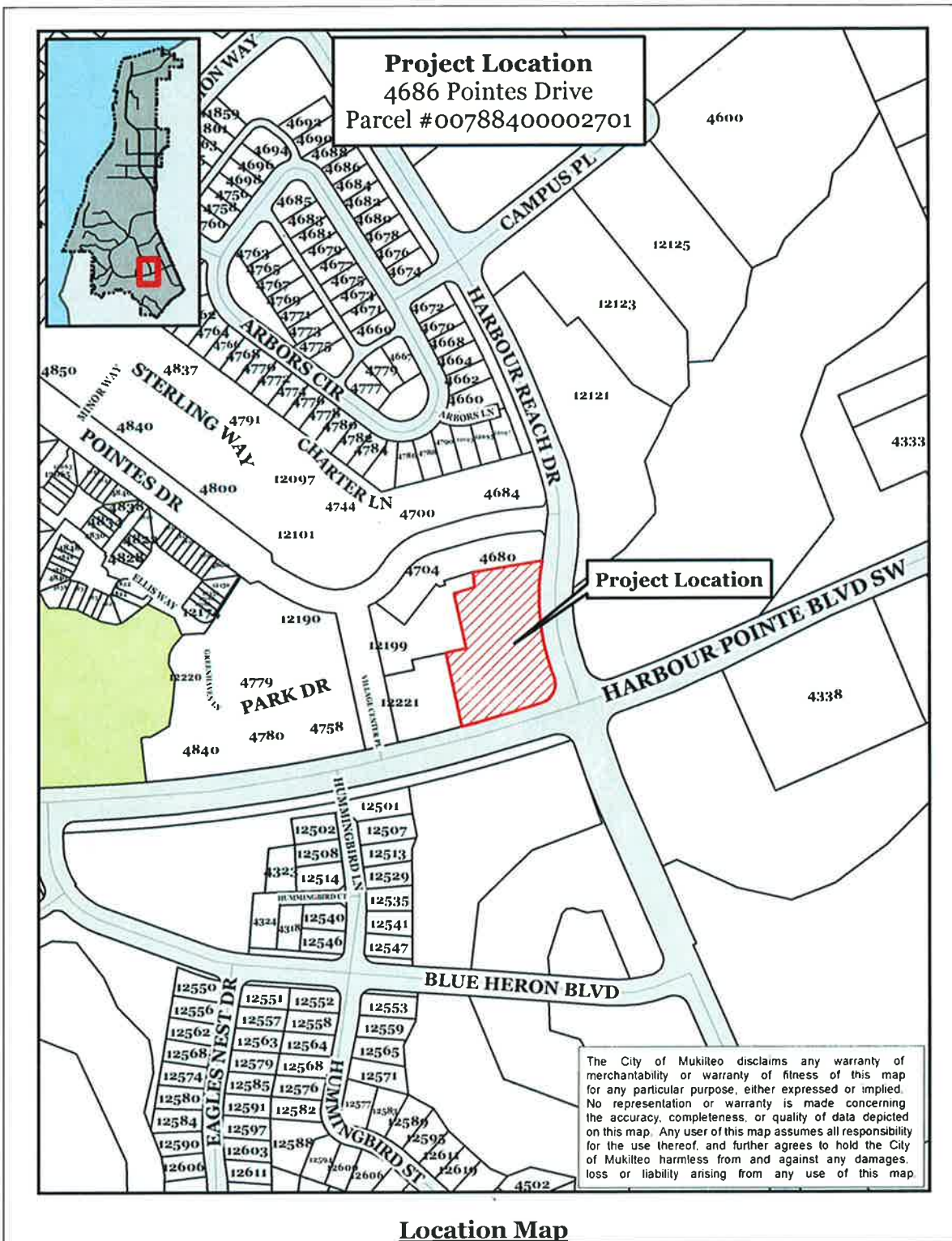
Contact Person: Anita Marrero, Associate Planner (425) 263-8044

Signature: _____

Anita Marrero, Associate Planner

Date: _____

6/6/16



Date Issued: Tuesday, June 14, 2016
Date Advertised: Tuesday, June 14, 2016
End Comment Period: Tuesday, June 28, 2016

pc: Applicant/Representative
 Reviewing Agencies
 Interested Parties

CDD Director
 Permit Services Supervisor
 Permit Services Assistants (2)

Property File



Date stamp

RECEIVED
JUN 01 2016
CITY OF MUKILTEO
PPR # _____
SEPA # _____
Misc # _____

Land Use Permit Application

Applicant: DAVID FEY Owner: HSP HARBOUR POINTE, LLC
Address: JENSEN FEY ARCHITECTURE Address: 4120 18TH AVE SE
7730 LEARY, REDMOND 98052 ISSAQUAH, WA 98027
Phone: 425.216.0318x311 Phone: (425)401.0791
Project Address: 4xxx HARBOUR POINTE BLVD. SW

Legal Description of Property: PARCEL 1 OF PLA RECORDED UNDER
AFN 20020328007, RECORDS OF SNOHOMISH COUNTY, WA.

Key Contact Person: DAVID FEY Phone: 425.216.0318x311
Fax: DAVID@JENSENFEY.COM

Project Type:

- | | | |
|--|---|---|
| <input checked="" type="checkbox"/> Commercial | <input type="checkbox"/> Preliminary Subdivision* | <input type="checkbox"/> Special Use Permit* |
| <input type="checkbox"/> Multi-Family | <input type="checkbox"/> Final Subdivision* | <input type="checkbox"/> Reasonable Use |
| <input type="checkbox"/> Industrial | <input type="checkbox"/> Preliminary Short Plat* | <input type="checkbox"/> Lot Line Adjustment* |
| <input type="checkbox"/> Shoreline* (JARPA) | <input type="checkbox"/> Final Short Plat* | <input checked="" type="checkbox"/> Grading* |
| <input type="checkbox"/> Conditional Use* | <input type="checkbox"/> Sector Plan Amendment | <input type="checkbox"/> Binding Site Plan |
| <input type="checkbox"/> Variance* | <input type="checkbox"/> Waterfront Development | <input type="checkbox"/> Project Rezone |
| | <input type="checkbox"/> Single Family Residence | <input type="checkbox"/> Other, Specify _____ |

* Need to fill out supplemental application form with project.

Project Resume:

Existing Use: VACANT Proposed Use: ASSISTED LIVING
Total Site Area: 65,632 Landscaping Area: 17,639 SF
Building Foot Print Area: 25,830 Water District: ALDERWOOD
Lot Coverage: 39.4 % Sewer District: ALDERWOOD
Parking Provided: 29 SPACES # of Proposed Units: 52 UNITS
Building Height: _____ Comp Plan Designation: COMMERCIAL MIXED USE
Gross Floor Area by Uses: 44,255 SF Zoning: PCB (SOUTH)
ASSISTED LIVING
Pre-application Meeting Held: (Y/N; date) YES

The information given is said to be true under the penalty of perjury by the laws of the State of Washington.

Applicant/Authorized Agent Signature

Date

Owners Signature

Date

MUKILTEO MEMORY CARE



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JUN 01 2016
CITY OF MUKILTEO

PROJECT TEAM				VICINITY MAP	
OWNER:	HSP-HARBOR POINTE, LLC. 4120 187th Avenue SE Issaquah, WA 98027 Ph: 425-401-0791 Contact: Chuck Henderson	INTERIOR DESIGN	CONLEY 360 2310 Country RD D West Roseville, MN 55112 Ph: 651-204-7096 Contact: Jason Shuster Contact: Emily Weber	KITCHEN EQUIPMENT:	SMITH AND GREENE 19015 66th Ave S Kent, WA 98032 Ph: 512-343-3100 Contact: Brick Brunton
	email: Chuck@chuckh.net		email: jason@conley360.com email: emily@conley360.com		email: brick@smithandgreene.com
ARCHITECT:	JENSEN FEY ARCHITECTURE 7730 Leary Way Redmond, WA 98052 Ph: 425-216-0318 Contact: David Fey	STRUCTURAL ENGINEER:	MC SQUARED INC. 1235 East 4th Ave Olympia, WA 98506 Ph: 360-754-8339 Contact: Mike Szramek	LANDSCAPE ARCHITECT:	BRUMBAUGH & ASSOCIATES 600 North 85th Street, Suite 102 Seattle, WA 98103-3826 Contact: Mark Brumbaugh
	email: davidf@jensenfey.com		email: mikes@mc2-inc.com		email: Mark@brumbaugh-assoc.com
CONTRACTOR:	BAYLEY 8005 SE 28th St. Mercer Island, WA 98040 Ph: 206-621-8884 Contact: Jon Lindberg	MECHANICAL/ PLUMBING:	EVERGREEN REFRIGERATION & HVAC 727 South Kenyon St. Seattle, WA 98108 Ph: 206-763-1744 x237 Contact: Mark Gemeinhardt	OPERATOR:	SENIOR SERVICES OF AMERICA 1201 Pacific Ave Tacoma, WA 98402 Contact: Lee Field
	email: jon.lindberg@bayley.net		email: mark@evergreenhvac.com		email: LField@seniorservicesofamerica.com
CIVIL ENGINEER:	WESTERN ENGINEERS & SURVEYORS 9740 Evergreen Way Everett, WA 98204 Ph: 425-356-2700 x108 Contact: Jesse Jarrell	ELECTRICAL ENGINEERS :	SEATAC ELECTRIC 7056 South 220th St. Kent, WA 98032 Ph: 253-872-5553 Contact: Corey McKinnon		
	email: jessiel@wesi.co		email: corey.mckinnon@seataelectric.com		

2014

Jensen/Fey
Architecture and Planning
7730 LEARY WAY NE
REDMOND, WA 98052
TEL: 425.216.0318 FAX: 425.216.0319

DESCRIPTION

DATE

MARK

DRAWN

CHECKED

JOB NO. 5115

MUKILTEO MEMORY CARE
HARBOR POINTE BLVD SW & HARBOR REACH DR

COVER SHEET

SHEET

A0.0

OF SHEETS



associated
earth sciences
incorporated

RECEIVED

JUN 01 2016

CITY OF MUKILTEO



*Subsurface Exploration, Geologic Hazard, and
Geotechnical Engineering Report*

HARBOUR POINTE MEMORY CARE

Mukilteo, Washington

Prepared For:

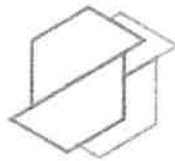
HSP - HARBOUR POINTE, LLC

Project No. KE160175A

May 20, 2016



Associated Earth Sciences, Inc.
911 5th Avenue
Kirkland, WA 98033
P (425) 827 7701
F (425) 827 5424



a s s o c i a t e d
e a r t h s c i e n c e s

May 20, 2016
Project No. KE160175A

HSP - Harbour Pointe, LLC
4120 187th Avenue SE
Issaquah, Washington 98027

Attention: Mr. Charles L. Henderson

Subject: Subsurface Exploration, Geologic Hazard, and
Geotechnical Engineering Report
Harbour Pointe Memory Care
Mukilteo, Washington

Dear Mr. Henderson:

We are pleased to present the enclosed copies of the above-referenced report. This report summarizes the results of our subsurface exploration, geologic hazard, and geotechnical engineering studies and offers recommendations for the design and development of the proposed project. Our recommendations are preliminary in that construction details have not been finalized at the time of this report.

We have enjoyed working with you on this study and are confident that the recommendations presented in this report will aid in the successful completion of your project. If you should have any questions, or if we can be of additional help to you, please do not hesitate to call.

Sincerely,
ASSOCIATED EARTH SCIENCES, INC.
Kirkland, Washington

Bruce L. Blyton, P.E.
Senior Principal Engineer

BLB/lid - KE160175A2 - Projects\20160175\KE\WP

**SUBSURFACE EXPLORATION, GEOLOGIC HAZARD, AND
GEOTECHNICAL ENGINEERING REPORT**

HARBOUR POINTE MEMORY CARE

Mukilteo, Washington

Prepared for:

HSP - Harbour Pointe, LLC
4120 187th Avenue SE
Issaquah, Washington 98027

Prepared by:

Associated Earth Sciences, Inc.
911 5th Avenue
Kirkland, Washington 98033
425-827-7701
Fax: 425-827-5424

May 20, 2016
Project No. KE160175A

I. PROJECT AND SITE CONDITIONS

1.0 INTRODUCTION

This report presents the results of Associated Earth Sciences, Inc.'s (AESI's) subsurface exploration, geologic hazard, and geotechnical engineering study for the Harbour Pointe Memory Care project, located at the northwest corner of Harbour Reach Drive and Harbour Pointe Boulevard SW in Mukilteo, Washington (Figure 1). The site boundaries, the proposed building area, and the approximate locations of the explorations accomplished for this study are presented on the "Site and Exploration Plan," Figure 2. Logs of the subsurface explorations completed for this study are included in the Appendix.

1.1 Purpose and Scope

The purpose of this study was to provide geotechnical engineering recommendations to be utilized in the design of the project. This study included a review of selected available geologic literature, excavation of six exploration pits, and performing geologic studies to assess the type, thickness, distribution, and physical properties of the subsurface sediments and depth of shallow ground water. Geotechnical engineering studies were completed to establish recommendations for the type of suitable foundations and floors, allowable foundation soil bearing pressure, anticipated foundation and floor settlement, and drainage considerations. Subsurface data was also used to formulate our opinion regarding the feasibility of infiltrating storm water generated on site. This report summarizes our fieldwork, and offers preliminary recommendations based on our present understanding of the project. We recommend that we be allowed to review the recommendations presented in this report, and revise them, if needed, when project plans have been developed.

1.2 Authorization

Written authorization to proceed with this study was granted by Mr. Charles L. Henderson of HSP - Harbour Pointe, LLC by means of our signed scope of work and cost proposal. Our study was accomplished in general accordance with our proposal dated April 7, 2016. This report has been prepared for the exclusive use of HSP - Harbour Pointe, LLC, and its agents, for specific application to this project. Within the limitations of scope, schedule, and budget, our services have been performed in accordance with generally accepted geotechnical engineering and engineering geology practices in effect in this area at the time our report was prepared. No other warranty, express or implied, is made.

2.0 PROJECT AND SITE DESCRIPTION

The project site consists of an existing parcel, located at the northwest corner of Harbour Reach Drive and Harbour Pointe Boulevard SW in Mukilteo, Washington (Snohomish County Parcel No. 00788400002701), with an area of approximately 1.51 acres. The subject site is generally flat-lying and is currently vegetated with tall grasses, with areas of brush. The site is bounded by existing residential and commercial property to the north and west, Harbour Reach Drive to the east, and Harbour Pointe Boulevard SW to the south.

The proposed project consists of the construction of a two-story wood-frame commercial building, along with associated access and utilities. For the purpose of preparing this report, we have assumed that the new structure will be constructed close to existing grades without the need for deep earthwork cuts or thick structural fills. We have assumed that light to moderate foundation loads typical of wood-framed construction will be required. Should actual project design differ significantly from our assumptions, AESI should be allowed to review the report, and revise the recommendations, as appropriate.

3.0 SUBSURFACE EXPLORATION

Our field study included excavating a series of exploration pits to gain subsurface information about the site. The various types of sediments, as well as the depths where characteristics of the sediments changed, are indicated on the exploration logs presented in the Appendix. The depths indicated on the logs where conditions changed may represent gradational variations between sediment types in the field. Our explorations were approximately located in the field relative to known site features shown on the topographic site plan. The approximate locations of the exploration pits are shown on Figure 2.

The conclusions and recommendations presented in this report are based, in part, on the exploration pits completed for this study. The number, locations, and depths of the explorations were completed within site and budgetary constraints. Because of the nature of exploratory work below ground, interpolation of subsurface conditions between field explorations is necessary. It should be noted that differing subsurface conditions may sometimes be present due to the random nature of deposition and the alteration of topography by past grading and/or filling. The nature and extent of variations between the field explorations may not become fully evident until construction. If variations are observed at that time, it may be necessary to re-evaluate specific recommendations in this report and make appropriate changes.

3.1 Exploration Pits

Exploration pits were excavated with a track-mounted excavator. The pits permitted direct, visual observation of subsurface conditions. Materials encountered in the exploration pits were studied and classified in the field by a representative from our firm. All exploration pits were backfilled immediately after examination and logging. Selected samples were then transported to our laboratory for further visual classification.

4.0 SUBSURFACE CONDITIONS

Subsurface conditions at the project site were inferred from the field explorations accomplished for this study, visual reconnaissance of the site, and review of selected applicable geologic literature. As shown on the exploration logs, the exploration pits generally encountered topsoil and/or fill over unsorted, dense to very dense glacial sediments. The following section presents more detailed subsurface information organized from the youngest to the oldest sediment types.

Because of the nature of exploratory work below ground, extrapolation of subsurface conditions between field explorations is necessary. It should be noted that differing subsurface conditions may sometimes be present due to the random nature of deposition and the alteration of topography by past grading and/or filling. The nature and extent of any variations between the field explorations may not become fully evident until construction begins.

4.1 Stratigraphy

Topsoil

An organic topsoil or grass sod layer was encountered at the ground surface at exploration pits EP-1 through EP-3, EP-5, and EP-6. The thickness of the topsoil layer observed in our explorations was approximately 0.5 feet. The organic topsoil is not suitable for foundation support or for use in a structural fill.

Fill

Fill soils (soils not naturally placed) consisting of loose silty sand with gravel and trace organics were encountered to approximately 2.5 feet below the ground surface at exploration pit EP-4. Also, loose to medium dense silty sand with gravel, interpreted as fill or reworked in-place material (modified ground) was observed to approximately 2 feet below the ground surface at EP-3. The exact extent and depth of fills can vary widely over short distances. Fill is also expected in unexplored areas of the site, such as in previously-graded/reworked areas or in

existing utility trenches. Due to their variable density and organic debris content, the existing fill soils are not suitable for foundation support.

Lodgement Till

Sediments encountered below the grass sod/topsoil or fill generally consisted of medium dense to very dense, silty sand with some gravel. We interpret these sediments to be representative of Vashon lodgement till. The Vashon lodgement till was deposited directly from basal, debris-laden glacial ice during the Vashon Stade of the Fraser Glaciation approximately 12,500 to 15,000 years ago. The reduced density observed within the topmost 1.5 feet and 3.5 feet of the till encountered in exploration pits EP-4 and EP-6, respectively, is interpreted to be due to weathering. The high relative density of the unweathered till is due to its consolidation by the massive weight of the glacial ice from which it was deposited. The lodgement till soil extended below the maximum depths explored.

Published Geologic Map

Review of the regional geologic map titled *Distribution and Description of Geologic Units in the Mukilteo Quadrangle, Washington* by James P. Minard (1982) indicates that the project area is expected to be underlain at shallow depth by Vashon lodgement till. Our interpretation of the sediments encountered at the project site is in general agreement with the published geologic mapping of the site and vicinity.

4.2 Hydrology

We did not encounter ground water in our exploration pits. We expect ground water seepage across much of the site to be limited to interflow. Interflow occurs when surface water percolates down through the surficial weathered or higher-permeability sediments and becomes perched atop underlying, lower-permeability sediments. It should be noted that the occurrence and level of ground water seepage at the site may vary in response to such factors as changes in season, precipitation, and site use.

4.3 Infiltration Feasibility

Vashon lodgement till deposits underlie the site to the maximum depth explored of about 6 feet below ground surface (bgs). Permeability of these sediments is relatively low, and storm water infiltration is not recommended.

II. GEOLOGIC HAZARDS AND MITIGATIONS

The following discussion of potential geologic hazards is based on the geologic, slope, and shallow ground water conditions as observed and discussed herein.

5.0 SEISMIC HAZARDS AND MITIGATIONS

Earthquakes occur in the Puget Lowland with great regularity. The vast majority of these events are small and are usually not felt by people. However, large earthquakes do occur, as evidenced by the 1949, 7.2-magnitude event; the 2001, 6.8-magnitude event; and the 1965, 6.5-magnitude event. The 1949 earthquake appears to have been the largest in this region during recorded history and was centered in the Olympia area. Evaluation of earthquake return rates indicates that an earthquake of the magnitude between 5.5 and 6.0 is likely within a given 20-year period.

Generally, there are four types of potential geologic hazards associated with large seismic events: 1) surficial ground rupture, 2) seismically induced landslides, 3) liquefaction, and 4) ground motion. The potential for each of these hazards to adversely impact the proposed project is discussed below.

5.1 Surficial Ground Rupture

The nearest known fault trace to the project site is the South Whidbey Island Fault Zone (SWIFZ). A recent study by the U.S. Geological Survey (USGS) (Sherrod et al., 2005, *Holocene Fault Scarps and Shallow Magnetic Anomalies Along the Southern Whidbey Island Fault Zone Near Woodinville, Washington*, Open-File Report 2005-1136, March 2005) indicates that "strong" evidence of prehistoric earthquake activity has been observed along associated fault strands thought to be part of the SWIFZ. The study suggests as many as nine earthquake events along the SWIFZ may have occurred within the last 16,400 years. The recognition of this fault splay is relatively new, and data pertaining to it are limited, with the studies still ongoing. The recurrence interval of movement along this fault system is still unknown, although it is hypothesized to be in excess of 1,000 years. Due to the suspected long recurrence interval, it is our opinion that the potential for damage to the proposed structure by surficial ground rupture is considered to be low. No mitigations other than complying with 2012 *International Building Code* (IBC) seismic design recommendations are recommended.

5.2 Seismically Induced Landslides

It is our opinion that the potential risk of damage to the proposed development by seismically induced slope failures is low due to the lack of steep slopes in the project area.

5.3 Liquefaction

It is our opinion that the risk of damage to the proposed structure by liquefaction is low due to the high relative density of the underlying sediments, and the lack of adverse ground water conditions. No mitigation of liquefaction hazards is recommended for the project.

5.4 Ground Motion

Structural design of the building should follow 2012 IBC standards using Site Class "C" as defined in Table 20.3-1 of *American Society of Civil Engineers (ASCE) 7 – Minimum Design Loads for Buildings and Other Structures*.

6.0 EROSION HAZARDS AND MITIGATIONS

The on-site sediments contain a high percentage of silt and fine sand and are sensitive to erosion. In order to control erosion and reduce the amount of sediment transport off the site during construction, the following recommendations should be followed:

1. Construction activity should be scheduled or phased as much as possible to reduce the amount of earthwork activity that is performed during the winter months.
2. The winter performance of a site is dependent on a well-conceived plan for control of site erosion and storm water runoff. The project temporary erosion and sediment control (TESC) plan should include ground-cover measures, access roads, and staging areas. The contractor must implement and maintain the required measures. A site maintenance plan should be in place in the event storm water turbidity measurements are greater than the Washington State Department of Ecology (Ecology) standards.
3. TESC measures for a given area to be graded or otherwise worked should be installed soon after ground clearing. The recommended sequence of construction within a given area after clearing would be to install sediment traps and/or ponds and establish perimeter flow control prior to starting mass grading.

4. During the wetter months of the year, or when large storm events are predicted during the summer months, each work area should be stabilized so that if showers occur, the work area can receive the rainfall without excessive erosion or sediment transport. The required measures for an area to be "buttoned-up" will depend on the time of year and the duration the area will be left un-worked. During the winter months, areas that are to be left un-worked for more than 2 days should be mulched or covered with plastic. During the summer months, stabilization will usually consist of seal-rolling the subgrade. Such measures will aid in the contractor's ability to get back into a work area after a storm event. The stabilization process also includes establishing temporary storm water conveyance channels through work areas to route runoff to the approved treatment facilities.
5. All disturbed areas should be revegetated as soon as possible. If it is outside of the growing season, the disturbed areas should be covered with mulch, as recommended in the erosion control plan. Straw mulch provides a cost-effective cover measure and can be made wind-resistant with the application of a tackifier after it is placed.
6. Surface runoff and discharge should be controlled during and following development. Uncontrolled discharge may promote erosion and sediment transport.
7. Soils that are to be reused around the site should be stored in such a manner as to reduce erosion from the stockpile. Protective measures may include, but are not limited to, covering with plastic sheeting, the use of low stockpiles in flat areas, or the use of silt fences around pile perimeters.
8. On-site erosion control inspections and turbidity monitoring (when required) should be performed in accordance with Ecology requirements. Weekly and monthly reporting to Ecology should be performed on a regularly scheduled basis. Temporary and permanent erosion control and drainage measures should be adjusted and maintained, as necessary, for the duration of project construction.

It is our opinion that with the proper implementation of the TESC plans and by field-adjusting appropriate mitigation elements (best management practices [BMPs]) throughout construction, as recommended by the erosion control inspector, the potential adverse impacts from erosion hazards on the project may be mitigated.

III. DESIGN RECOMMENDATIONS

7.0 INTRODUCTION

Our exploration indicates that, from a geotechnical standpoint, the parcel is suitable for the proposed development provided the recommendations contained herein are properly followed. The foundation bearing stratum is relatively shallow and conventional spread footing foundations may be utilized. Consequently, foundations bearing on either the medium dense to very dense, natural glacial sediments or on structural fill placed over these sediments are capable of providing suitable building support. Infiltration of on-site storm water is not recommended due to the presence of low-permeability lodgement till sediments underlying the site.

8.0 SITE PREPARATION

8.1 Clearing and Stripping

Site preparation of the planned building areas should include removal of all trees, brush, debris, and any other deleterious materials. These unsuitable materials should be properly disposed of off site. Additionally, all organic topsoil within the proposed building area, or areas to receive structural fill should be removed and the remaining roots grubbed. Areas where loose surficial soils exist due to grubbing operations should be considered as fill to the depth of disturbance and treated as subsequently recommended for structural fill placement. Any existing fill soils below footing areas should be stripped down to the underlying, medium dense to dense natural sediments.

8.2 Temporary and Permanent Slopes

In our opinion, stable construction slopes should be the responsibility of the contractor and should be determined during construction based on the local conditions encountered at that time. For estimating purposes, however, we anticipate that temporary, unsupported cut slopes in the existing fill or weathered till can be made at a maximum slope of 1.5H:1V (Horizontal:Vertical) or flatter. Temporary, unsupported cut slopes within the medium dense to very dense lodgement till sediments can be planned up to a 1H:1V inclination.

Permanent cut and structural fill slopes should not exceed an inclination of 2H:1V. Permanent non-structural landscape fill should not exceed a 3H:1V inclination. As is typical with earthwork operations, some sloughing and raveling may occur, and cut slopes may have to be adjusted in the field. In addition, WISHA/OSHA regulations should be followed at all times.

8.3 Site Disturbance

The on-site sediments contain a high percentage of fine-grained material, which makes them moisture-sensitive and subject to disturbance when wet. The contractor must use care during site preparation and excavation operations so that the underlying soils are not softened. If disturbance occurs, the softened soils should be removed and the area brought to grade with structural fill. If crushed rock is considered for the access and staging areas, it should be underlain by stabilization fabric (such as Mirafi 500X or approved equivalent) to reduce the potential of fine-grained materials pumping up through the rock and turning the area to mud. The fabric will also aid in supporting construction equipment, thus reducing the amount of crushed rock required. We recommend that at least 10 inches of rock be placed over the fabric; however, due to the variable nature of the near-surface soils and differences in wheel loads, this thickness may have to be adjusted by the contractor in the field. Crushed rock used for access and staging areas should be of at least 2-inch size.

9.0 STRUCTURAL FILL

Placement of structural fill may be necessary to establish desired grades in some areas. All references to structural fill in this report refer to subgrade preparation, fill type, and placement and compaction of materials as discussed in this section. If a percentage of compaction is specified under another section of this report, the value given in that section should be used.

9.1 Subgrade Compaction

After overexcavation/stripping has been performed to the satisfaction of the geotechnical engineer/engineering geologist, the upper 12 inches of exposed ground should be recompacted to a firm and unyielding condition. If the subgrade contains too much moisture, suitable recompaction may be difficult or impossible to attain and should probably not be attempted. In lieu of recompaction, the area to receive fill should be blanketed with washed rock or quarry spalls to act as a capillary break between the new fill and the wet subgrade. Where the exposed ground remains soft and further overexcavation is impractical, placement of an engineering stabilization fabric may be necessary to prevent contamination of the free-draining layer by silt migration from below.

After recompaction of the exposed ground is tested and approved, or a free-draining rock course is laid, structural fill may be placed to attain desired grades.

9.2 Structural Fill Compaction

Structural fill is defined as non-organic soil, acceptable to the geotechnical engineer, placed in maximum 10-inch loose lifts, with each lift being compacted to at least 95 percent of the modified Proctor maximum dry density using *American Society for Testing and Materials* (ASTM) D-1557 as the standard. Utility trench backfill should be placed and compacted in accordance with applicable municipal codes and standards. The top of the compacted fill should extend horizontally a minimum distance of 3 feet beyond footings or pavement edges before sloping down at an angle no steeper than 2H:1V. Fill slopes should either be overbuilt and trimmed back to final grade or surface-compacted to the specified density.

9.3 Moisture-Sensitive Fill

Soils in which the amount of fine-grained material (smaller than No. 200 sieve) is greater than approximately 5 percent (measured on the minus No. 4 sieve size) should be considered moisture-sensitive. Use of moisture-sensitive soil in structural fills should be limited to favorable dry weather conditions. The on-site sediments are generally suitable for use as structural fill; however, the lodgement till sediments contain significant amounts of silt and are considered highly moisture-sensitive. If the moisture content of these sediments is elevated at the time of construction, moisture-conditioning would be recommended prior to their use as structural fill. Such moisture-conditioning could consist of spreading out and aerating the soil out during periods of warm, dry weather.

Construction equipment traversing the site when the soils are very moist or wet can cause considerable disturbance. If fill is placed during wet weather or if proper compaction cannot be attained, a select import or on-site material consisting of a clean, free-draining gravel and/or sand should be used. Free-draining fill consists of non-organic soil with the amount of fine-grained material limited to 5 percent by weight when measured on the minus No. 4 sieve fraction.

9.4 Structural Fill Testing

The contractor should note that any proposed fill soils must be evaluated by AESI prior to their use in fills. This would require that we have a sample of the material at least 3 business days in advance to perform a Proctor test and determine its field compaction standard.

A representative from our firm should inspect the stripped subgrade and be present during placement of structural fill to observe the work and perform a representative number of in-place density tests. In this way, the adequacy of the earthwork may be evaluated as filling progresses and any problem areas may be corrected at that time. It is important to understand that taking random compaction tests on a part-time basis will not assure uniformity or

acceptable performance of a fill. As such, we are available to aid the owner in developing a suitable monitoring and testing frequency.

10.0 FOUNDATIONS

10.1 Allowable Soil Bearing Pressure

Spread footings may be used for building support when founded either directly on the medium dense to very dense, natural glacial sediments, or on structural fill placed over these materials. Sediments suitable for foundation support were encountered in our explorations at depths of approximately 2 to 4 feet but may be locally deeper, particularly in the vicinity of existing buried utilities. For footings founded either directly upon the medium dense to very dense glacial sediments, or on structural fill as described above, we recommend that an allowable bearing pressure of 3,000 pounds per square foot (psf) be used for design purposes, including both dead and live loads. We recommend that the footing subgrade be recompacted to a firm and unyielding condition prior to footing placement. An increase in the allowable bearing pressure of one-third may be used for short-term wind or seismic loading. If structural fill is placed below footing areas, the structural fill should extend horizontally beyond the footing edges a distance equal to or greater than the thickness of the fill.

10.2 Footing Depths

Perimeter footings for the proposed building should be buried a minimum of 18 inches into the surrounding soil for frost protection. No minimum burial depth is required for interior footings; however, all footings must penetrate to the prescribed stratum, and no footings should be founded in or above loose, organic, or existing fill soils.

10.3 Footings Adjacent to Cuts

The area bounded by lines extending downward at 1H:1V from any footing must not intersect another footing or intersect a filled area that has not been compacted to at least 95 percent of ASTM D-1557. In addition, a 1.5H:1V line extending down from any footing must not daylight because sloughing or raveling may eventually undermine the footing. Thus footings should not be placed near the edges of steps or cuts in the bearing soils.

10.4 Footing Settlement

Anticipated settlement of footings founded as described above should be on the order of 1 inch or less. However, disturbed soil not removed from footing excavations prior to footing placement could result in increased settlements.

10.5 Footing Subgrade Bearing Verification

All footing areas should be observed by AESI prior to placing concrete to verify that the exposed soils can support the design foundation bearing capacity and that construction conforms with the recommendations in this report. Foundation bearing verification may also be required by the governing municipality.

10.6 Foundation Drainage

Perimeter footing drains should be provided as discussed under the "Drainage Considerations" section of this report.

11.0 LATERAL WALL PRESSURES

All backfill behind walls or around foundations should be placed following our recommendations for structural fill and as described in this section of the report. Horizontally backfilled walls, which are free to yield laterally at least 0.1 percent of their height, may be designed using an equivalent fluid equal to 35 pounds per cubic foot (pcf). Fully restrained, horizontally backfilled, rigid walls that cannot yield should be designed for an equivalent fluid of 50 pcf. Walls that retain sloping backfill at a maximum angle of 50 percent should be designed for 60 pcf for yielding conditions and 75 pcf for restrained conditions. If parking areas or driveways are adjacent to walls, a surcharge equivalent to 2 feet of soil should be added to the wall height in determining lateral design forces.

11.1 Wall Backfill

The lateral pressures presented above are based on the conditions of a uniform backfill consisting of either the on-site glacial sediments or imported sand and gravel compacted to 90 percent of ASTM D-1557. A higher degree of compaction is not recommended, as this will increase the pressure acting on the walls. A lower compaction may result in unacceptable settlement behind the walls. Thus, the compaction level is critical and must be tested by our firm during placement.

11.2 Wall Drainage

It is imperative that proper drainage be provided so that hydrostatic pressures do not develop against the walls. This would involve installation of a minimum 1-foot-wide blanket drain for the full wall height using imported, washed gravel against the walls.

11.3 Passive Resistance and Friction Factor

Lateral loads can be resisted by friction between the foundation and the natural, medium dense to dense glacial sediments or supporting structural fill soils, or by “passive” earth pressure acting on the buried portions of the foundations. The foundations must be backfilled with compacted structural fill to achieve the passive resistance provided below. We recommend the following design parameters:

- Passive equivalent fluid = 250 pcf
- Coefficient of friction = 0.30

11.4 Seismic Surcharge

As required by the 2012 IBC, retaining wall design should include a seismic surcharge pressure in addition to the equivalent fluid pressures presented above. Considering the site soils and the recommended wall backfill materials, we recommend a seismic surcharge pressure of 5H and 10H psf, where H is the wall height in feet for the “active” and “at-rest” loading conditions, respectively. The seismic surcharge should be modeled as a rectangular distribution with the resultant applied at the midpoint of the walls.

12.0 FLOOR SUPPORT

Slab-on-grade floors may be constructed either directly on the medium dense to very dense natural sediments, or on structural fill placed over these materials. Areas of the slab subgrade that are disturbed (loosened) during construction should be recompacted to an unyielding condition prior to placing the pea gravel, as described below.

If moisture intrusion through slab-on-grade floors is to be limited, the floors should be constructed atop a capillary break consisting of a minimum thickness of 4 inches of washed pea gravel or washed crushed rock. The pea gravel/crushed rock should be overlain by a 10-mil (minimum thickness) plastic vapor retarder.

13.0 DRAINAGE CONSIDERATIONS

Most of the natural glacial sediments encountered in our explorations contained significant amounts of silt and are considered to be highly moisture-sensitive. Traffic from vehicles, construction equipment, and even foot traffic across these sediments when they are very moist or wet will result in disturbance of the otherwise firm stratum. Therefore, prior to site

work and construction, the contractor should be prepared to provide drainage and subgrade protection, as necessary.

13.1 Wall/Foundation Drains

All retaining and perimeter footing walls should be provided with a drain at the footing elevation. The drains should consist of rigid, perforated, polyvinyl chloride (PVC) pipe surrounded by washed pea gravel. The level of the perforations in the pipe should be set approximately 2 inches below the bottom of the footing, and the drains should be constructed with sufficient gradient to allow gravity discharge away from the building. All retaining walls should be lined with a minimum, 12-inch-thick, washed gravel blanket provided to within 1 foot of finish grade, and which ties into the footing drain. Roof and surface runoff should not discharge into the footing drain system, but should be handled by a separate, rigid, tightline drain.

Exterior grades adjacent to walls should be sloped downward away from the structure to achieve surface drainage. Final exterior grades should promote free and positive drainage away from the building at all times. Water must not be allowed to pond or to collect adjacent to the foundation or within the immediate building area. It is recommended that a gradient of at least 3 percent for a minimum distance of 10 feet from the building perimeter be provided, except in paved locations. In paved locations, a minimum gradient of 1 percent should be provided unless provisions are included for collection and disposal of surface water adjacent to the structure. Additionally, pavement subgrades should be crowned to provide drainage toward catch basins and pavement edges.

14.0 PROJECT DESIGN AND CONSTRUCTION MONITORING

We are available to provide additional geotechnical consultation as the project design develops and possibly changes from that upon which this report is based. If significant changes in grading are made, we recommend that AESI perform a geotechnical review of the plans prior to final design completion. In this way, our earthwork and foundation recommendations may be properly interpreted and implemented in the design.

We are also available to provide geotechnical engineering and monitoring services during construction. The integrity of the foundations depends on proper site preparation and construction procedures. In addition, engineering decisions may have to be made in the field in the event that variations in subsurface conditions become apparent. Construction monitoring services are not part of this current scope of work. If these services are desired, please let us know, and we will prepare a proposal.

We have enjoyed working with you on this study and are confident that these recommendations will aid in the successful completion of your project. If you should have any questions, or require further assistance, please do not hesitate to call.

Sincerely,
ASSOCIATED EARTH SCIENCES, INC.
Kirkland, Washington

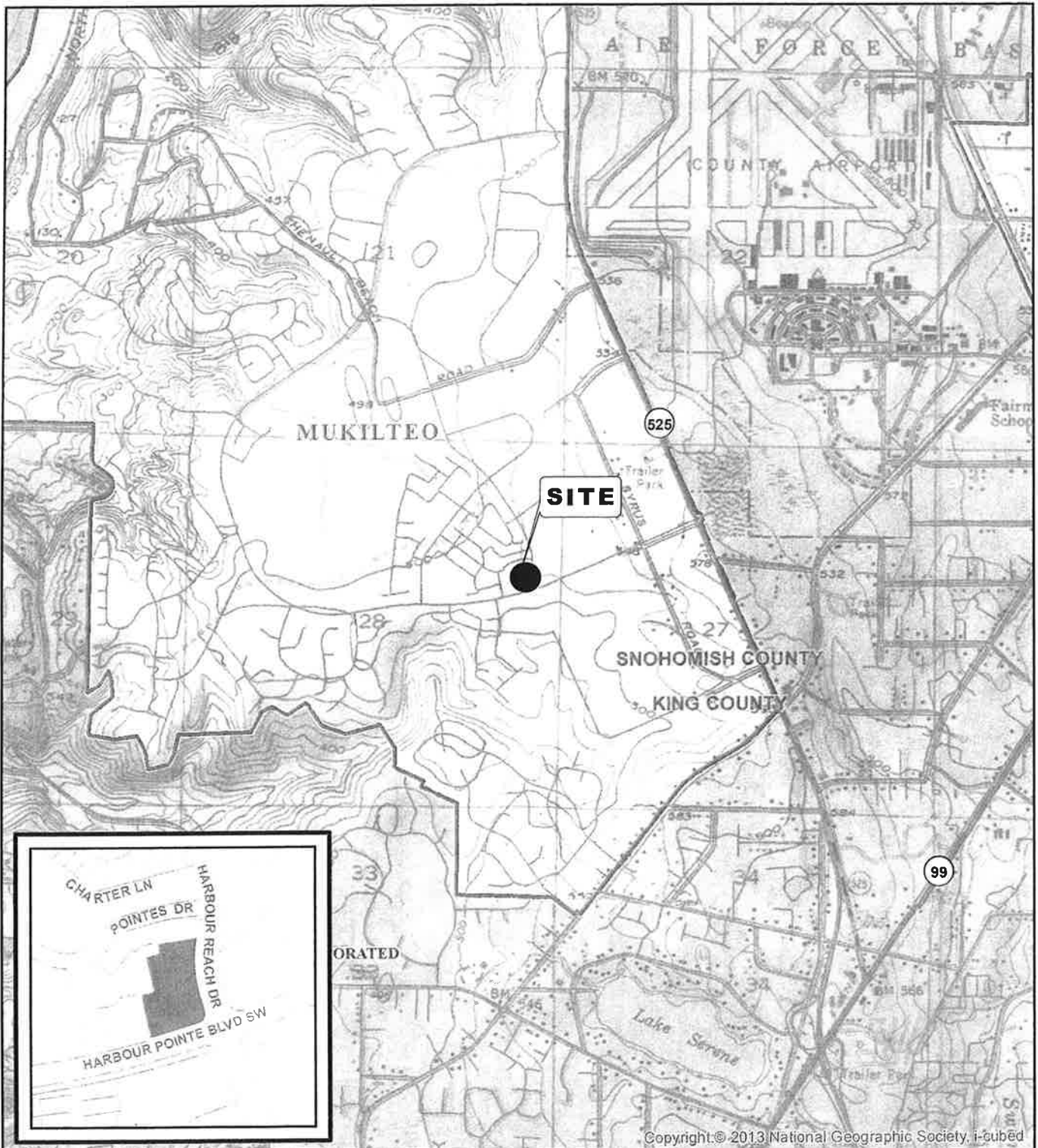


Jeffrey P. Laub, L.G., L.E.G.
Senior Project Engineering Geologist

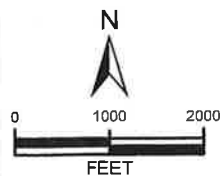


Bruce L. Blyton, P.E.
Senior Principal Engineer

Attachments: Figure 1: Vicinity Map
 Figure 2: Site and Exploration Plan
 Appendix: Exploration Logs



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VICINITY MAP

HARBOUR POINTE MEMORY CARE
MUKILTEO, WASHINGTON

DATA SOURCES / REFERENCES:
USGS: 24K SERIES TOPOGRAPHIC MAPS
SNOHOMISH CO: STREETS, PARCELS

LOCATIONS AND DISTANCES SHOWN ARE APPROXIMATE

NOTE: BLACK AND WHITE
REPRODUCTION OF THIS COLOR
ORIGINAL MAY REDUCE ITS
EFFECTIVENESS AND LEAD TO
INCORRECT INTERPRETATION

PROJ NO.	KE160175A	DATE:	5/16	FIGURE:	1
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LEGEND:
 ■ EP EXPLORATION PIT
 CONTOUR INTERVAL = N/A

NOTE: LOCATION AND DISTANCES SHOWN ARE APPROXIMATE.

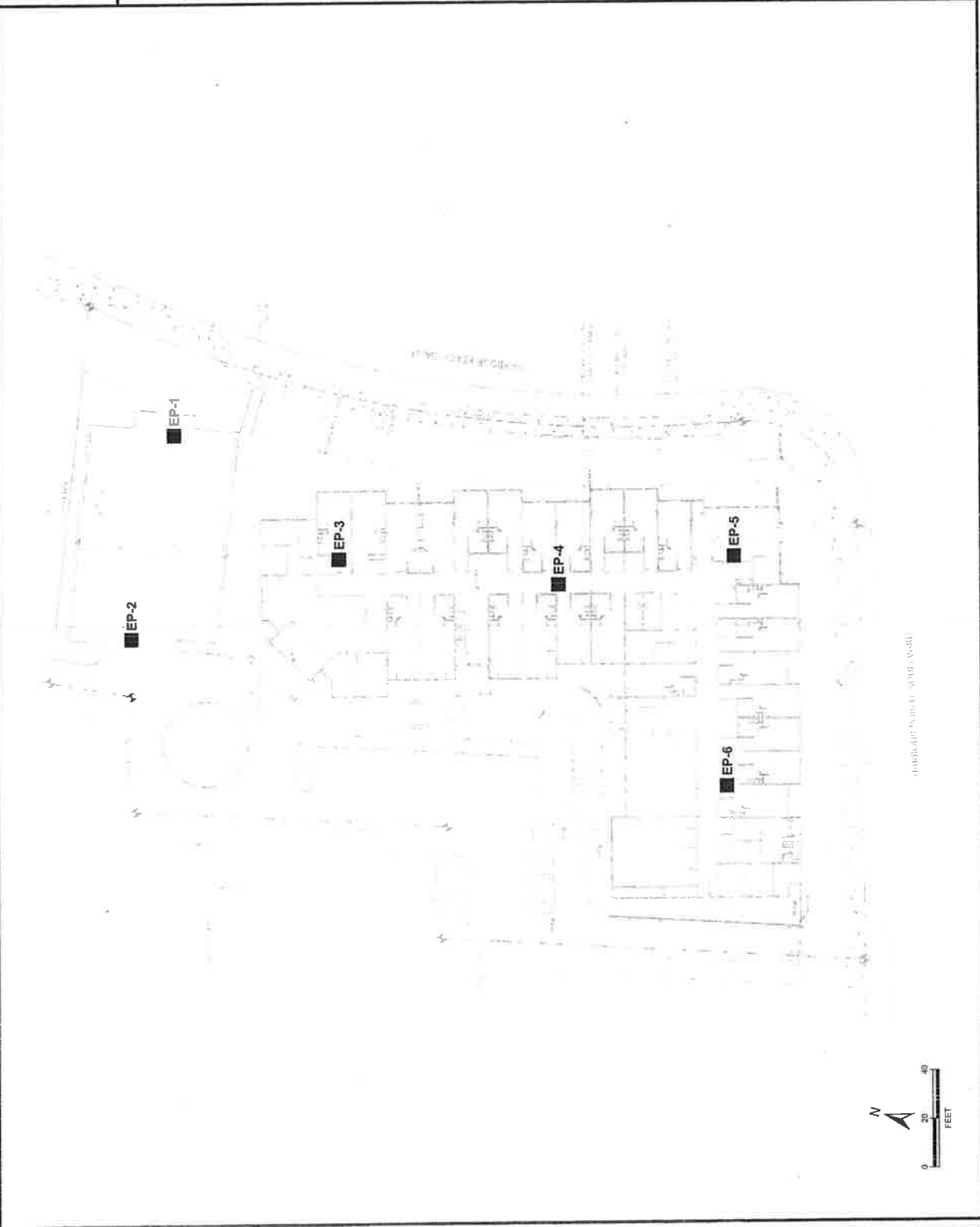
NOTES:
 1. BASE MAP REFERENCE: JENSEN, FEY, HARBOUR POINTE
 MEMORY CARE, SITE PLAN, SHEET A100, 4/22/16, ISSUED 5/4/16.



SITE AND EXPLORATION PLAN

HARBOUR POINTE MEMORY CARE
 MUKILTEO, WASHINGTON

PROJ. NO. KE160175A DATE: 5/16 FIGURE: 2

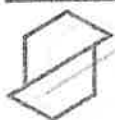


APPENDIX

Exploration Logs

Coarse-Grained Soils - More than 50% ⁽¹⁾ Retained on No. 200 Sieve		Terms Describing Relative Density and Consistency	
Sands - 50% ⁽¹⁾ or More of Coarse Fraction Passes No. 4 Sieve	Gravels - More than 50% ⁽¹⁾ of Coarse Fraction Retained on No. 4 Sieve		
	≤ 5% Fines (5)	≥ 12% Fines (5)	
Fine-Grained Soils - 50% ⁽¹⁾ or More Passes No. 200 Sieve	Sands - 50% ⁽¹⁾ or More of Coarse Fraction Passes No. 4 Sieve	≤ 5% Fines (5)	GW Well-graded gravel and gravel with sand, little to no fines
			GP Poorly-graded gravel and gravel with sand, little to no fines
			GM Silty gravel and silty gravel with sand
	Sands - 50% ⁽¹⁾ or More of Coarse Fraction Passes No. 4 Sieve	≤ 5% Fines (5)	GC Clayey gravel and clayey gravel with sand
			SW Well-graded sand and sand with gravel, little to no fines
			SP Poorly-graded sand and sand with gravel, little to no fines
	Sands - 50% ⁽¹⁾ or More of Coarse Fraction Passes No. 4 Sieve	≤ 5% Fines (5)	SM Silty sand and silty sand with gravel
			SC Clayey sand and clayey sand with gravel
Fine-Grained Soils - 50% ⁽¹⁾ or More Passes No. 200 Sieve	Sands - 50% ⁽¹⁾ or More of Coarse Fraction Passes No. 4 Sieve	≤ 5% Fines (5)	ML Silt, sandy silt, gravelly silt, silt with sand or gravel
			CL Clay of low to medium plasticity; silty, sandy, or gravelly clay, lean clay
			OL Organic clay or silt of low plasticity
	Sands - 50% ⁽¹⁾ or More of Coarse Fraction Passes No. 4 Sieve	≤ 5% Fines (5)	MH Elastic silt, clayey silt, silt with micaceous or diatomaceous fine sand or silt
			CH Clay of high plasticity, sandy or gravelly clay, fat clay with sand or gravel
			OH Organic clay or silt of medium to high plasticity
Highly Organic Soils	Sands - 50% ⁽¹⁾ or More of Coarse Fraction Passes No. 4 Sieve	≤ 5% Fines (5)	PT Peat, muck and other highly organic soils
	Sands - 50% ⁽¹⁾ or More of Coarse Fraction Passes No. 4 Sieve	≤ 5% Fines (5)	

Classifications of soils in this report are based on visual field and/or laboratory observations, which include density/consistency, moisture condition, grain size, and plasticity estimates and should not be construed to imply field or laboratory testing unless presented herein. Visual-manual and/or laboratory classification methods of ASTM D-2487 and D-2488 were used as an identification guide for the Unified Soil Classification System.



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EXPLORATION LOG KEY

FIGURE A1

LOG OF EXPLORATION PIT NO. EP-1

Depth (ft)	<p>This log is part of the report prepared by Associated Earth Sciences, Inc. (AESI) for the named project and should be read together with that report for complete interpretation. This summary applies only to the location of this trench at the time of excavation. Subsurface conditions may change at this location with the passage of time. The data presented are a simplification of actual conditions encountered.</p> <p style="text-align: center;">DESCRIPTION</p>
	Grass Sod / Topsoil
	Vashon Lodgement Till
1	Dense to very dense, moist, brownish gray, silty, fine to medium SAND, some gravel (SM).
2	
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7	Bottom of exploration pit at depth 6 feet No seepage. No caving.
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KCTP3 160175.GPJ May 17, 2016

Harbour Pointe Memory Care Mukilteo, WA

Logged by: JPL
Approved by: JNS



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Project No. KE160175A

5/4/16

LOG OF EXPLORATION PIT NO. EP-2

Depth (ft)	<p>This log is part of the report prepared by Associated Earth Sciences, Inc. (AESI) for the named project and should be read together with that report for complete interpretation. This summary applies only to the location of this trench at the time of excavation. Subsurface conditions may change at this location with the passage of time. The data presented are a simplification of actual conditions encountered.</p> <p>DESCRIPTION</p>
1	<p>Grass Sod / Topsoil</p> <p>Vashon Lodgement Till</p>
2	Dense to very dense, moist, brownish gray, silty, fine to medium SAND, some gravel (SM).
3	
4	
5	<p>Bottom of exploration pit at depth 4 feet</p> <p>No seepage. No caving.</p>
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KCTP3 160175.GPJ May 17, 2016

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Project No. KE160175A

5/4/16

LOG OF EXPLORATION PIT NO. EP-3

Depth (ft)	This log is part of the report prepared by Associated Earth Sciences, Inc. (AESI) for the named project and should be read together with that report for complete interpretation. This summary applies only to the location of this trench at the time of excavation. Subsurface conditions may change at this location with the passage of time. The data presented are a simplification of actual conditions encountered.
	DESCRIPTION
	Grass Sod / Topsoil
	Fill / Modified Ground
1	Loose to medium dense, moist, brownish gray, silty, fine to medium SAND, some gravel (SM).
2	Vashon Lodgement Till
3	Dense to very dense, moist, brownish gray, silty, fine to medium SAND, some gravel (SM).
4	
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6	Bottom of exploration pit at depth 5 feet No seepage. No caving.
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KCTP3 160175.GPJ May 17, 2016

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Project No. KE160175A

5/4/16

LOG OF EXPLORATION PIT NO. EP-4

Depth (ft)	This log is part of the report prepared by Associated Earth Sciences, Inc. (AESI) for the named project and should be read together with that report for complete interpretation. This summary applies only to the location of this trench at the time of excavation. Subsurface conditions may change at this location with the passage of time. The data presented are a simplification of actual conditions encountered.
	DESCRIPTION
	Fill
1	Loose, moist, rust stained brown and gray, silty, SAND, some gravel, trace organics (SM).
2	
	Weathered Vashon Lodgement Till
3	Medium dense to dense, moist, rust stained brownish gray, silty, fine to medium SAND, some gravel (SM).
4	
	Vashon Lodgement Till
5	Dense to very dense, moist, brownish gray, silty, fine to medium SAND, some gravel (SM).
6	
7	Bottom of exploration pit at depth 5.5 feet No seepage. No caving.
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KCTP3 160175.GPJ May 17, 2016

Harbour Pointe Memory Care Mukilteo, WA

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Project No. KE160175A

5/4/16

LOG OF EXPLORATION PIT NO. EP-5

Depth (ft)	<p>This log is part of the report prepared by Associated Earth Sciences, Inc. (AESI) for the named project and should be read together with that report for complete interpretation. This summary applies only to the location of this trench at the time of excavation. Subsurface conditions may change at this location with the passage of time. The data presented are a simplification of actual conditions encountered.</p> <p>DESCRIPTION</p>
1	<p>Grass Sod / Topsoil</p> <p>Vashon Lodgement Till</p>
2	Dense to very dense, moist, brownish gray, silty, fine to medium SAND, some gravel (SM).
3	
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6	<p>Bottom of exploration pit at depth 5 feet</p> <p>No seepage. No caving.</p>
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KCTP3 160175.GPJ May 17, 2016

Harbour Pointe Memory Care Mukilteo, WA

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Project No. KE160175A

5/4/16

LOG OF EXPLORATION PIT NO. EP-6

Depth (ft)	This log is part of the report prepared by Associated Earth Sciences, Inc. (AESI) for the named project and should be read together with that report for complete interpretation. This summary applies only to the location of this trench at the time of excavation. Subsurface conditions may change at this location with the passage of time. The data presented are a simplification of actual conditions encountered.
	DESCRIPTION
	Grass Sod / Topsoil
1	Weathered Vashon Lodgement Till
	Loose to medium dense, moist, reddish brown, silty, SAND, some gravel (SM)
2	Medium dense to dense, moist, rust stained brownish gray, silty, fine to medium SAND, some gravel (SM).
3	
4	Vashon Lodgement Till
5	Dense to very dense, moist, brownish gray, silty, fine to medium SAND, some gravel (SM).
6	Bottom of exploration pit at depth 5.5 feet
7	No seepage. No caving.
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KCTP3 160175.GPJ May 17, 2016

Harbour Pointe Memory Care Mukilteo, WA

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Project No. KE160175A

5/4/16

**CITY OF MUKILTEO
ENVIRONMENTAL CHECKLIST**



A. BACKGROUND

1. Name of proposed project, if applicable: **Mukilteo Memory Care at Harbour Pointe**
2. Name of applicant: **HSP – Harbour Pointe, LLC.**
3. Address and phone number of applicant and contact person: **Chuck Henderson, 4120 187th Avenue SE, Issaquah, WA 98027. (206) 550-6852**
4. Date checklist prepared: **May 27, 2016**
5. Agency requesting checklist: **City of Mukilteo**
6. Proposed timing or schedule (including phasing, if applicable): **Construction start: Upon permit issuance – estimated to be August 1, 2017.**
7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain: **No.**
8. List any environmental information you know about that has been prepared or will be prepared, directly related to this proposal: **Soils Report prepared by Associated Earth Sciences, Inc. dated May 20, 2016. Traffic Opinion being prepared by Gibson Traffic Consultants.**
9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain: **No other approvals.**
10. List any government approvals or permits that will be needed for your proposal, if known: **City of Mukilteo Site Plan Approval, Clearing and Grading Permit, Building Permit. Washington State Department of Labor and Industries Elevator Permit, Mechanical, Electrical and Plumbing Permits.**

Part Eleven WAC 197-11-960 Environmental Checklist

Washington State Department of Health Construction Review Services plan approval for Licensed Assisted Living Facility.

Part Eleven WAC 197-11-960 Environmental Checklist

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description): **New two story wood framed structure of approximately 44,000sf housing 52 assisted living units of memory care residents located on 65,632 sf corner lot.**
12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist: **Project to be located at the intersection of Harbour Reach Drive and Harbour Pointe Boulevard SW in Mukilteo, Wa,**

TO BE COMPLETED BY APPLICANT:

EVALUATION FOR
AGENCY USE ONLY

B. ENVIRONMENTAL ELEMENTS:

1. EARTH

- a. General description of this site (circle one): Flat, rolling, hilly, steep slopes, mountainous, other _____: ☐
- b. What is the steepest slope on the site (approximately percent slope)? 7% ☐
- c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland: **Generally, sediments encountered below a 6" grass sod/topsoil layer consisted of medium dense to very dense, silty sand with some gravel. Localized areas of fill soil consisting of loose silty sand with gravel and trace organics are found to a depth of 2.5 feet.** ☐

Part Eleven WAC 197-11-960 Environmental Checklist

TO BE COMPLETED BY APPLICANT:

EVALUATION FOR
AGENCY USE ONLY

- d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe: **No.** ☐
- e. Describe the purpose, type and approximate quantities of any filling or grading proposed. Indicate source of fill: **Existing site will be re-graded plus approximately 300 cy of imported structural fill will be placed to establish the desired finish grade/finish floor elevation.** ☐
- f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe: **Limited erosion might occur.** ☐
- g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? **47,993 sf of area (73%) will be covered with impervious surfaces.** ☐
- h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any: **Best practices are outlined in the storm water management plans.** ☐
2. AIR
- a. What types of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known: **Limited emissions associated with earth moving equipment during the initial stage of construction will occur. On-going emissions from automobiles will be limited based on the limited number of trips generated.** ☐

Part Eleven WAC 197-11-960 Environmental Checklist

TO BE COMPLETED BY APPLICANT:

EVALUATION FOR
AGENCY USE ONLY

- b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe: **No.** ☐
- c. Proposed measures to reduce or control emissions or other impacts to air, if any: **None.** ☐

3. WATER

a. Surface:

- (1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into: **None.** ☐
- (2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans: **No.** ☐
- (3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material: **None.** ☐
- (4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known: **No.** ☐
- (5) Does the proposal lie within a 100-year flood plain? If so, note location on the site plan: **No.** ☐
- (6) Does the proposal involve any discharges of waste materials to surface ☐

Part Eleven WAC 197-11-960 Environmental Checklist

TO BE COMPLETED BY APPLICANT:

EVALUATION FOR AGENCY USE ONLY

waters? If so, describe the type of waste and anticipated volume of discharge: **No.**

b. Ground:

- (1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known: **No.** ☐

- (2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: domestic sewage; industrial, containing the following chemicals...; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve. **None.** ☐

c. Water Runoff (including storm water):

- (1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe: **On-site detention will occur in underground vaults, with metered flow going to the regional detention pond across Harbour Reach Drive.** ☐

- (2) Could waste materials enter ground or surface waters? If so, generally describe: **No.** ☐

- d. Proposed measures to reduce or control surface, ground and runoff water impact, if any: **On-site detention.** ☐

4. PLANTS

Part Eleven WAC 197-11-960 Environmental Checklist

TO BE COMPLETED BY APPLICANT:

EVALUATION FOR
AGENCY USE ONLY

- a. Check or circle types of vegetation found on the site: ☐
- ___ Deciduous tree: alder, maple, aspen, other
___ Evergreen tree: fir, cedar, pine, other
___ Shrubs
___ Grass
___ Pasture
___ Crop or grain
___ Wet soil plants: cattail, buttercup, bullrush, skunk, cabbage, other
___ Water plants: water lily, eelgrass, milfoil, other
___ Other types of vegetation: Brush
- b. What kind and amount of vegetation will be removed or altered? **Existing grass and brush will be removed at planned building and landscaping areas.** ☐
- c. List threatened or endangered species known to be on or near the site. **None.** ☐
- d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any: **Landscaping as prescribed will be placed within the landscape buffers along Harbour Reach Drive and Harbour Pointe Boulevard SW. Additional landscaping plantings will be placed immediately surrounding the building and within the courtyard.** ☐
5. ANIMALS
- a. Circle any birds and animals which have been observed on or near the site or are known to be on or near the site: **None Observed.** ☐
- Birds: hawk, heron, eagle, songbirds, other:
Mammals: deer, bear, elk, beaver, other:
Fish: bass, salmon, trout, herring, shellfish, other:
- b. List any threatened or endangered species known to be on or near the site: **None known.** ☐

Part Eleven WAC 197-11-960 Environmental Checklist

TO BE COMPLETED BY APPLICANT:

EVALUATION FOR AGENCY USE ONLY

c. Is the site part of a migration route? If so, explain: **No.**

☐

d. Proposed measures to preserve or enhance wildlife, if any:

☐

6. ENERGY AND NATURAL RESOURCES

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc. **Natural Gas will be used for cooking, hot water heating, laundry dryers, and common area heating. Electric heating and cooling units (PTAC's) will be used at resident units. Electric Heat Pumps will be used to cool common areas.**

☐

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe: **No.**

☐

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any: **Energy Smart appliances will be used.**

☐

7. ENVIRONMENTAL HEALTH

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe: **No.**

☐

(1) Describe special emergency services that might be required: **None outside of typical services required of residents of similar age living within the community.**

☐

Part Eleven WAC 197-11-960 Environmental Checklist

TO BE COMPLETED BY APPLICANT:

EVALUATION FOR
AGENCY USE ONLY

- (2) Proposed measures to reduce or control environmental health hazards, if any: ☐
- b. Noise:
- (1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)? **Airplane noise.** ☐
- (2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site. **None.** ☐
- (3) Proposed measures to reduce or control noise impacts, if any: **Thermal insulation at attics and walls, double glazing at all windows.** ☐

8. LAND AND SHORELINE USE

- a. What is the current use of the site and adjacent properties? **Vacant Land.** ☐
- b. Has the site been used for agriculture? If so, describe: **Not Known.** ☐
- c. Describe any structures on the site: **None.** ☐
- d. Will any structures be demolished? If so, what? **No.** ☐

Part Eleven WAC 197-11-960 Environmental Checklist

TO BE COMPLETED BY APPLICANT:

EVALUATION FOR
AGENCY USE ONLY

- e. What is the current zoning classification of the site? **PCB South** ☐
- f. What is the current comprehensive plan designation of the site? **Commercial Mixed Use.** ☐
- g. If applicable, what is the current shoreline master program designation of the site? **NA** ☐
- h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify: **No.** ☐
- i. Approximately how many people would reside or work in the completed project? **Sixty (60) individuals will reside in the completed project. Approximately 60 staff members total (most working part-time over 24/7 time time frame).** ☐
- j. Approximately how many people would the completed project displace? **None.** ☐
- k. Proposed measures to avoid or reduce displacement impacts, if any: ☐
- l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any: **The project is designed to comply with comprehensive plan and zoning requirements.** ☐

Part Eleven WAC 197-11-960 Environmental Checklist

TO BE COMPLETED BY APPLICANT:

EVALUATION FOR
AGENCY USE ONLY

9. HOUSING

- a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing: **52 Units.** ☐
- b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing: **None.** ☐
- c. Proposed measures to reduce or control housing impacts, if any: ☐

10. AESTHETICS

- a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed? **35'-4" measured from first floor level. The principal material is Cementitious siding (Hardie).** ☐
- b. What views in the immediate vicinity would be altered or obstructed? **Limited views would be impacted.** ☐
- c. Proposed measures to reduce or control aesthetic impacts, if any: ☐

11. LIGHT AND GLARE

- a. What type of light or glare will the proposal produce? What time of day would it mainly occur? **Limited light generated at windows in evenings. Site lighting at parking lot will be shielded.** ☐

Part Eleven WAC 197-11-960 Environmental Checklist

TO BE COMPLETED BY APPLICANT:

EVALUATION FOR AGENCY USE ONLY

- b. Could light or glare from the finished project be a safety hazard or interfere with views? **No.** ☐
- c. What existing off-site sources of light or glare may affect your proposal? **None.** ☐
- d. Proposed measures to reduce or control light and glare impacts, if any: ☐

12. RECREATION

- a. What designated and informal recreational opportunities are in the immediate vicinity? **NA** ☐
- b. Would the proposed project displace any existing recreational uses? If so describe: **No.** ☐
- c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any: **None.** ☐

13. HISTORIC AND CULTURAL PRESERVATION

- a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe: **No.** ☐
- b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site: **None.** ☐

Part Eleven WAC 197-11-960 Environmental Checklist

TO BE COMPLETED BY APPLICANT:

EVALUATION FOR
AGENCY USE ONLY

- c. Proposed measures to reduce or control impacts, if any: **None.**

☐

14. TRANSPORTATION

- a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any: **Project is bounded by Harbour Pointe Boulevard SW and Harbour Reach Drive. Access is through easement drives off of Pointes Drive and Village Center Place.**

☐

- b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop? **Yes. Stop is located on Harbour Pointe Boulevard Sw.**

☐

- c. How many parking spaces would the completed project have? How many would the project eliminate? **Twenty Nine (29) stalls.**

☐

- d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private). **No.**

☐

- e. Describe the existing condition of the proposed access road, including width of easement, width of pavement or roadway, curbs, gutters, and/or sidewalks. **Proposed access is through existing parking lot drive aisles with dedicated 24' wide access easements.**

☐

- f. Will the project use (or occur in the immediate vicinity of) water, rail or air transportation? If so, generally describe. **No.**

☐

Part Eleven WAC 197-11-960 Environmental Checklist

TO BE COMPLETED BY APPLICANT:

EVALUATION FOR
AGENCY USE ONLY

g. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur. **Traffic projections are forthcoming.**

☐

h. Proposed measures to reduce or control transportation impacts, if any:

☐

15. PUBLIC SERVICES

☐

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe: **No. Project assumes that its residents will be drawn from the community and will receive the same services they would receive if living elsewhere in the community.**

b. Proposed measures to reduce or control direct impacts on public services, if any:

☐

16. UTILITIES

☐

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed: electricity, natural gas, water, refuse service, telephone, sanitary sewer,

C. **SIGNATURE**

The information and answers provided in the Environmental Checklist (including Supplement for Non-project Actions, if applicable) are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature:  _____

Date Submitted: 06.1.16

Part Eleven WAC 197-11-960 Environmental Checklist

Agency Evaluation completed by: _____ Date: _____

Note: boxes (☐) are checked to indicate agency review of items in checklist.